

MEMORANDUM

TO: Vermont Mental Health Performance Indicator Project
Advisory Groups and Interested Parties
FROM: John Pandiani
DATE: August 14, 1998
RE: Inpatient Behavioral Health Care

Over the past few months, the Vermont Mental Health Performance Indicator Project (PIP) has presented you with a number of alternative measures of **Access to Services** at community mental health centers in Vermont's ten service areas. These measures have tended to focus on the most basic and widely accepted measures of accessibility: the number of clients served (usually on a per capita basis) and the amount of money invested in services (both per capita, and per client). These measures have been applied to Children's Services Programs, Adult Mental Health Outpatient Programs, and Community Rehabilitation and Treatment Programs. Where the information was available, measures of access have been reported for the most recent fiscal year and for up to 12 previous years. This historical information is designed to help us understand long-term trends and to evaluate whether current performance represents a divergence from previous norms. Where the information is available, we have also reported consumer evaluations of the accessibility of services.

This week we will begin our transition to a focus on mental health treatment **Practice Patterns** with a look at utilization of inpatient behavioral health care by Vermont residents during 1990 through 1996. Tables with data on the number of admissions, the number of patient days, and the number of people treated for behavioral health care in state, general, and Veteran's hospitals in Vermont and neighboring states are attached. The data indicate that there was a clear upward trend in the number of hospital admissions for behavioral health care between 1992 and 1996. There was a clear downward trend between 1990 and 1996 in the number of patient days devoted to behavioral health care. Finally, after a period of decline early in this period, the number of Vermont residents who were hospitalized for behavioral health care increased by 16% between 1992 and 1996. Tables with more detailed information on utilization patterns for different service sectors and for residents of different regions of the state are attached as well.

Inpatient utilization is an interesting topic for our transition from measures of access to measures of practice patterns. We are suggesting that you look at inpatient utilization as a measure of behavioral health care Practice Patterns in Vermont. Inpatient utilization rates, however, may also be used as a measure of access to care. Finally, one of the most important uses of inpatient utilization rates in the current era of performance measurement is the use of inpatient hospitalization rates as an indicator of **Treatment Outcome**. Over the months to come, we will be calculating and distributing measures of inpatient utilization subsequent to outpatient services as a measure of one important outcome of treatment at Vermont's community mental health centers.

If you have any questions, please send e-mail to pip@ddmhs.state.vt.us, or give me a call (802-241-2638).

INPATIENT BEHAVIORAL HEALTH CARE SERVICES Provided To Vermont Residents During 1990 - 1996

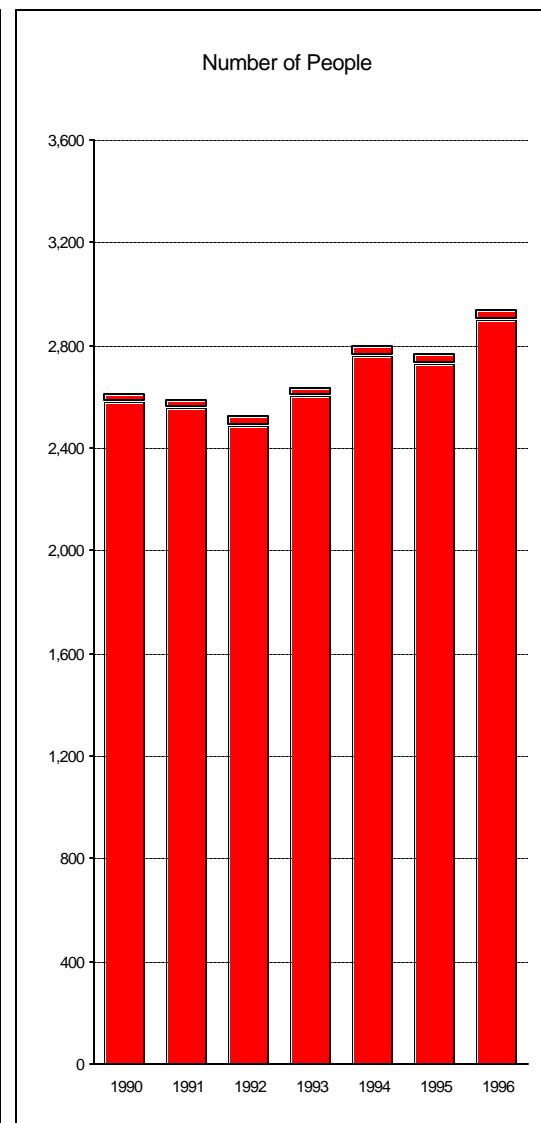
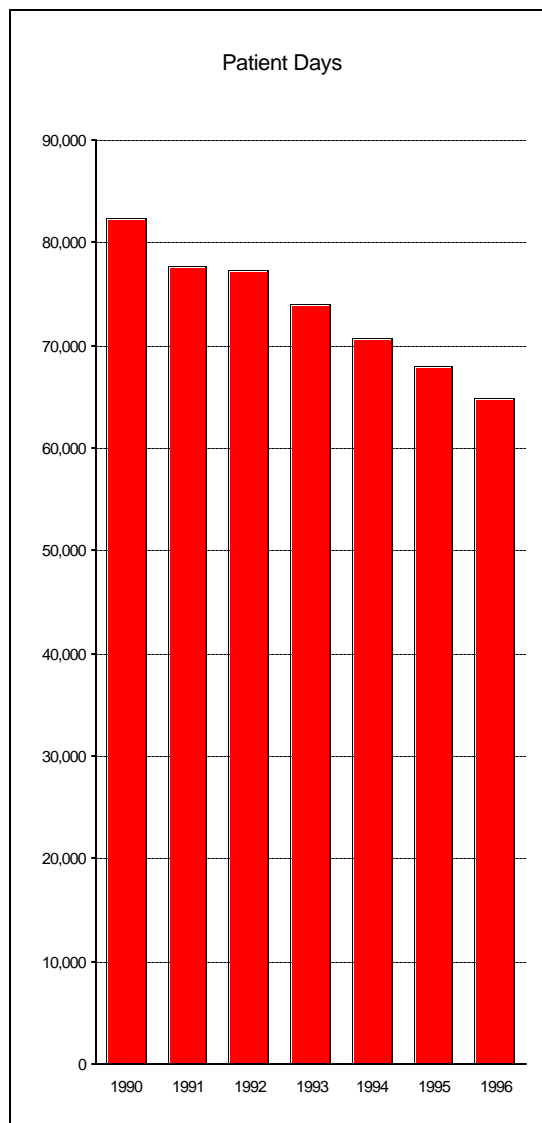
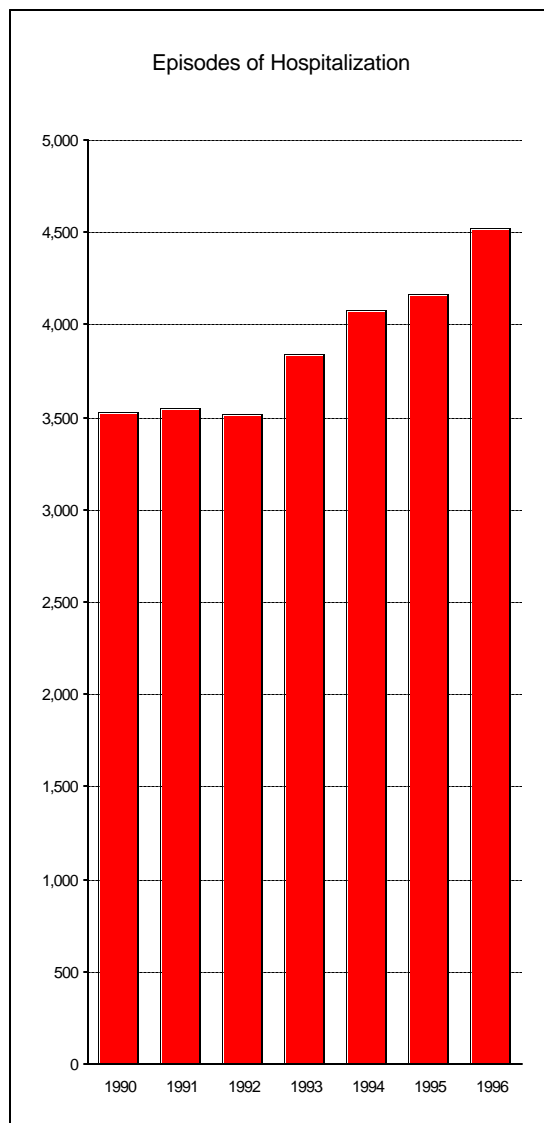


Table 4
Episodes of Hospitalization
for Inpatient Behavioral Health Care Services
Provided to Vermont Residents
During 1990 - 1996

Episodes of Hospitalization by Hospital Type

	1990	1991	1992	1993	1994	1995	1996
Total	3,523	3,550	3,515	3,846	4,079	4,164	4,528
VT General Hospitals	2,060	1,986	2,020	2,069	2,231	2,142	2,514
Vermont State Hospital	488	501	401	382	405	381	354
Brattleboro Retreat	226	242	256	346	377	519	639
VA Hospital - WRJ	218	224	235	241	260	254	236
New Hampshire Hospitals	494	553	504	662	703	730	679
Other Out-of-State Hospitals	37	44	99	146	103	138	106

Episodes of Hospitalization by County of Residence

	1990	1991	1992	1993	1994	1995	1996
Total	3,523	3,550	3,515	3,846	4,079	4,164	4,528
Addison	113	114	124	148	156	153	199
Bennington	219	250	229	290	296	345	332
Caledonia	150	154	153	188	159	181	183
Chittenden	818	824	706	760	838	759	754
Essex	31	33	35	35	33	36	44
Franklin/Grand Isle	155	168	192	186	185	151	220
Lamoille	105	118	95	103	100	100	108
Orange	159	175	179	210	161	188	196
Orleans	165	162	146	186	196	165	158
Rutland	364	389	394	367	412	450	446
Washington	491	439	489	450	521	491	606
Windham	273	276	316	388	420	525	637
Windsor	463	438	454	522	585	595	624
Unknown	17	10	3	13	17	25	21

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, database extracts provided by the Brattleboro Retreat, and Vermont State Hospital Client Database maintained by the Vermont Department of Developmental and Mental Health Services.

Table 1
Patient Days
for Inpatient Behavioral Health Care Services
Provided to Vermont Residents
During 1990 - 1996

Patient Days by Hospital Type

	1990	1991	1992	1993	1994	1995	1996
Total	82,315	77,816	77,269	73,955	70,786	67,986	64,919
VT General Hospitals	22,835	22,066	22,287	21,291	20,962	19,498	20,034
Vermont State Hospital	41,265	37,143	35,130	31,602	27,778	27,059	23,452
Brattleboro Retreat	7,165	6,288	5,538	7,265	7,589	9,735	12,373
VA Hospital - WRJ	3,442	3,244	5,389	3,474	3,792	3,667	3,086
New Hampshire Hospitals	7,106	8,523	7,068	8,859	8,482	6,058	4,968
Other Out-of-State Hospitals	502	552	1,857	1,464	2,183	1,969	1,006

Patient Days by County of Residence

	1990	1991	1992	1993	1994	1995	1996
Total	82,315	77,816	77,269	73,955	70,786	67,986	64,919
Addison	1,988	1,695	2,329	2,750	2,278	2,414	3,051
Bennington	3,871	4,167	3,740	4,137	4,570	4,560	4,048
Caledonia	2,934	3,122	2,672	2,333	2,173	1,946	2,049
Chittenden	18,581	19,957	18,558	18,181	16,940	16,660	13,617
Essex	293	507	418	418	751	364	521
Franklin/Grand Isle	3,755	3,994	5,704	3,790	4,244	3,024	3,962
Lamoille	2,844	2,745	1,838	2,334	1,841	1,210	1,328
Orange	2,760	2,872	3,441	3,015	2,171	2,213	2,629
Orleans	2,365	2,857	2,601	2,512	2,643	2,285	3,036
Rutland	6,285	5,626	5,858	5,038	5,233	6,856	5,376
Washington	19,120	15,036	14,408	12,771	12,749	11,193	10,034
Windham	6,744	6,173	8,050	8,282	6,883	7,673	8,491
Windsor	9,582	8,711	7,567	7,892	7,669	6,864	6,392
Unknown	1,193	354	85	502	641	724	385

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, database extracts provided by the Brattleboro Retreat, and Vermont State Hospital Client Database maintained by the Vermont Department of Developmental and Mental Health Services.

Table 6
Number of People
 Receiving Inpatient Behavioral Health Care Services
 Provided to Vermont Residents
 During 1990 - 1996

People Served by Hospital Type

	1990	1991	1992	1993	1994	1995	1996
Total	2,596 ± 18	2,571 ± 18	2,506 ± 17	2,618 ± 18	2,776 ± 20	2,744 ± 19	2,919 ± 20
VT General Hospitals	1,672 ± 12	1,596 ± 11	1,609 ± 12	1,589 ± 11	1,652 ± 12	1,568 ± 12	1,781 ± 13
Vermont State Hospital	413	428	349	323	344	330	289
Brattleboro Retreat	204	212	215	267	296	421	486
VA Hospital - WRJ	171 ± 2	174 ± 2	164 ± 2	187 ± 2	192 ± 3	200 ± 3	182 ± 3
New Hampshire Hospitals	374 ± 3	410 ± 3	386 ± 3	495 ± 4	558 ± 5	546 ± 5	480 ± 4
Other Out-of-State Hospitals	NA	NA	NA	NA	NA	NA	NA

People Served by County of Residence

	1990	1991	1992	1993	1994	1995	1996
Total	2,596 ± 18	2,571 ± 18	2,506 ± 17	2,618 ± 18	2,776 ± 20	2,744 ± 19	2,919 ± 20
Addison	88 ± 1.13	88 ± 1	89 ± 1	114 ± 1	104 ± 1	112 ± 1	120 ± 1
Bennington	171 ± 1.72	181 ± 2	165 ± 2	177 ± 2	205 ± 2	221 ± 2	232 ± 2
Caledonia	128 ± 1.44	128 ± 1	124 ± 1	138 ± 2	125 ± 1	138 ± 1	123 ± 1
Chittenden	598 ± 4.79	625 ± 5	544 ± 4	545 ± 4	591 ± 5	533 ± 4	546 ± 4
Essex	23 ± 0.52	29 ± 1	29 ± 1	30 ± 1	25 ± 1	27 ± 1	34 ± 1
Franklin/Grand Isle	125 ± 1.41	134 ± 1	148 ± 2	140 ± 2	149 ± 2	123 ± 1	161 ± 2
Lamoille	86 ± 1.13	93 ± 1	76 ± 1	79 ± 1	72 ± 1	75 ± 1	69 ± 1
Orange	121 ± 1.4	128 ± 1	119 ± 1	117 ± 1	119 ± 1	130 ± 1	136 ± 2
Orleans	126 ± 1.43	116 ± 1	111 ± 1	132 ± 1	126 ± 1	118 ± 1	118 ± 1
Rutland	301 ± 2.7	291 ± 3	299 ± 3	270 ± 2	304 ± 3	316 ± 3	302 ± 3
Washington	359 ± 3.17	303 ± 3	334 ± 3	293 ± 3	318 ± 3	303 ± 3	344 ± 3
Windham	207 ± 1.95	211 ± 2	222 ± 2	250 ± 2	300 ± 3	318 ± 3	393 ± 3
Windsor	323 ± 3.04	314 ± 3	313 ± 3	377 ± 3	374 ± 3	388 ± 3	390 ± 3
Unknown	16 ± 0.44	9 ± 0	3 ± 0	12 ± 0	17 ± 0	21 ± 1	18 ± 0

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, database extracts provided by the Brattleboro Retreat, and Vermont State Hospital Client Database maintained by the Vermont Department of Developmental and Mental Health Services.

The State of Vermont does not have a unique client identifiers across service providers. In order to derive unduplicated estimates of the number of people served, the Probabilistic Population Estimator has been used to provide both people estimates and 95% confidence limits. Estimates of the number of people served by Massachusetts and New York hospitals is not provided because the data is inadequate to conduct probabilistic population estimates. Actual people counts are available for Brattleboro Retreat and the Vermont State Hospital.

Table 7
Per Capita Utilization
For Inpatient Behavioral Health Care Services
Provided to Vermont Residents
During 1990 - 1996

People per 100,000 Population by Hospital Type

	1990	1991	1992	1993	1994	1995	1996
Total	461 ± 3	454 ± 3	440 ± 3	455 ± 3	478 ± 3	469 ± 3	496 ± 3
VT General Hospitals	297 ± 2	282 ± 2	282 ± 2	276 ± 2	285 ± 2	268 ± 2	303 ± 2
Vermont State Hospital	73	76	61	56	59	56	49
Brattleboro Retreat	36	37	38	46	51	72	83
VA Hospital - WRJ	30 ± 0	31 ± 0	29 ± 0	32 ± 0	33 ± 0	34 ± 1	31 ± 0
New Hampshire Hospitals	66 ± 1	72 ± 1	68 ± 1	86 ± 1	96 ± 1	93 ± 1	82 ± 1
Other Out-of-State Hospitals	NA	NA	NA	NA	NA	NA	NA

People per 100,000 Population by County of Residence

	1990	1991	1992	1993	1994	1995	1996
Total	461 ± 3	454 ± 3	440 ± 3	455 ± 3	478 ± 3	469 ± 3	496 ± 3
Addison	268 ± 3	263 ± 4	268 ± 3	326 ± 4	301 ± 4	320 ± 4	344 ± 4
Bennington	476 ± 5	508 ± 5	464 ± 5	495 ± 5	567 ± 5	615 ± 6	646 ± 6
Caledonia	458 ± 5	458 ± 5	441 ± 5	488 ± 5	436 ± 5	482 ± 5	429 ± 5
Chittenden	454 ± 4	469 ± 4	408 ± 3	398 ± 3	426 ± 3	377 ± 3	385 ± 3
Essex	360 ± 8	440 ± 9	442 ± 9	454 ± 9	387 ± 8	417 ± 9	540 ± 10
Franklin/Grand Isle	275 ± 3	292 ± 3	313 ± 4	295 ± 3	310 ± 3	253 ± 3	326 ± 3
Lamoille	437 ± 6	464 ± 6	371 ± 5	385 ± 5	343 ± 5	353 ± 5	318 ± 4
Orange	461 ± 5	492 ± 6	463 ± 5	449 ± 5	450 ± 5	484 ± 5	502 ± 6
Orleans	522 ± 6	483 ± 6	451 ± 6	534 ± 6	503 ± 6	470 ± 5	459 ± 5
Rutland	484 ± 4	463 ± 4	476 ± 4	429 ± 4	486 ± 4	506 ± 5	484 ± 4
Washington	653 ± 6	545 ± 5	600 ± 5	524 ± 5	566 ± 5	536 ± 5	607 ± 5
Windham	498 ± 5	508 ± 5	525 ± 5	590 ± 5	708 ± 6	749 ± 7	914 ± 8
Windsor	598 ± 6	585 ± 5	580 ± 5	706 ± 6	693 ± 6	714 ± 6	709 ± 6
Unknown	3 ± 0	2 ± 0	1 ± 0	2 ± 0	3 ± 0	4 ± 4	3 ± 0

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Population figures used in rate calculations obtained from the 1990 through 1995 Vital Statistics Reports published by the Vermont Department of Health.